Amendments to the Claims

Please amend Claims 1, 20 and 24. The Claim Listing below will replace all prior versions of the claims in the application:

Claim Listing

1. (Currently Amended) A method for removal of contaminants from a stream of hydride gas, comprising contacting the hydride gas stream with a material comprising: a) 3-20% by weight of at least one metal oxide from the lanthanide series and b) at least one transition metal, or oxide thereof, to reduce the level of contaminants of the gas stream to not more than about 100 parts per billion (ppb), the material being substantially unaffected by the gas, wherein the transition metal is selected from the group consisting of molybdenum (Mo), manganese (Mn), chromium (Cr), rhenium (Re), platinum (Pt), rhodium (Rh), ruthenium (Ru), vanadium (V), titanium (Ti), and cobalt (Co).

2. (Previously Presented) The method of claim 1, wherein the metal oxide from the lanthanide series is an oxide of a metal selected from the group consisting of lanthanide (La), cerium (Ce), praseodymium (Pr), neodymium (Nd), promethium (Pm), samarium (Sm), europium (Eu), gadolinium (Gd), terbium (Tb), dysprosium (Dy), holmium (Ho), erbium (Er), thulium (Tm) and ytterbium (Yb).

3. (Previously Presented) The method of claim 1, wherein the metal oxide from the lanthanide series is an oxide of a metal selected from the group consisting of La, Ce and Sm.

4. (Original) The method of claim 1, wherein the material further comprises a highly electropositive metal or highly electropositive metal oxide.

5. (Original) The method of claim 1, wherein the material further comprises a rare earth metal selected from the group consisting of scandium (Sc), yttrium (Y) and lutetium (Lu), a lanthanide metal or oxide thereof, or a combination thereof.

6. (Canceled)

7. (Previously Presented) The method of claim 1, wherein the transition metal is selected from the group consisting of manganese, chromium, molybdenum, vanadium, and titanium.

8. (Original) The method of claim 1, wherein the material is supported on a support substrate.

9. (Original) The method of claim 1, wherein the material has a surface area of less than about 100 m^2/g.

10. (Original) The method of claim 1, wherein the material has a surface area of less than about 75 m^2/g.

11. (Original) The method of claim 1, wherein the material has a surface area of less than about 50 m^2/g.

12. (Original) The method of claim 1, wherein the material has a surface area of less than about 20 m^2/g.

13. (Original) The method of claim 1, wherein the material has a capacity for oxygen that is at least about 4 liters of oxygen per liter of material at 25°C and 15 psig.

14. (Original) The method of claim 13, wherein the material further has a capacity for water vapor that is at least about 4 liters of water vapor per liter of material at 25°C and 15 psig.

15. (Original) The method of claim 1, wherein the hydride gas is selected from the group consisting of ammonia, arsine, phosphine, diborane, disilane, germane, silane and hydrogen.

16. (Original) The method of claim 1, wherein one or more of the contaminants are selected from the group consisting of water, carbon dioxide, oxygen, non-methane hydrocarbons, hydride gas oxidation products, secondary hydride gas contaminants, SO_x and NO_x, wherein x is 1-3.

17. (Original) The method of claim 16, wherein one or more of the contaminants are selected from the group consisting of water, oxygen and a combination thereof.

18. (Original) The method of claim 1, wherein one or more of the contaminants are volatile metal compounds.

19. (Original) The method of claim 1, wherein one or more of the contaminants are metal-containing compounds.

20. (Currently Amended) A composition for the purification of hydride gases, comprising: a) 3-20% by weight of at least one metal oxide from the lanthanide series; and b) at least one transition metal, or oxide thereof, wherein the composition is essentially free of at least one of copper, iron and nickel; and the transition metal is selected from the group consisting of molybdenum (Mo), manganese (Mn), chromium (Cr), rhenium (Re), platinum (Pt), rhodium (Rh), ruthenium (Ru), vanadium (V), titanium (Ti), and cobalt (Co).

21. (Previously Presented) The composition of claim 20, wherein the transition metal or oxide thereof is manganese oxide.

22. (Previously Presented) The method of Claim 1, wherein the metal of the lanthanide series is lanthanum oxide or cerium oxide.

23. (Previously Presented) The method of Claim 1, wherein the transition metal oxide is manganese oxide.

24. (Currently Amended) A method of removal of one or more contaminants from a stream of hydride gas, comprising contacting the hydride gas stream with a material comprising: a) 3-20% by weight of at least one metal oxide from the lanthanide series selected from the group consisting of praseodymium (Pr), neodymium (Nd), promethium (Pm), samarium (Sm), europium (Eu), gadolinium (Gd), terbium (Tb), dysprosium (Dy), holmium (Ho), erbium (Er), thulium (Tm) and ytterbium (Yb); and b) zirconium (Zr), or

oxide thereof, to reduce the level of contaminants of the gas stream to not more than about 100 parts per billion (ppb), the material being substantially unaffected by the gas.

25. (Previously Presented) A method of removal of one or more contaminants from a stream of hydride gas, comprising contacting the hydride gas stream with a material comprising: a) lanthanum oxide or cerium oxide; and b) zirconium (Zr), or oxide thereof, to reduce the level of contaminants of the gas stream to not more than about 100 parts per billion (ppb), the material being substantially unaffected by the gas, wherein the hydride gas is selected from the group consisting of ammonia, arsine, phosphine, diborane, disilane, germane and hydrogen.